

Arthroplasty – What was interesting in 2020?

Harish Bhende¹, Prakash K George²

1. Ceramic on ceramic (COC) and ceramic on poly (COP), both articulation works equally well in young patients over long periods of time. However, which is better? COP has risk of poly wear and future osteolysis requiring revision. While COC has risk of ceramic fracture, squeaking, early catastrophic failure. Kim et al. (JOA July 01, 2020) have tried to solve this issue by implanting one side COC and the other COP THR in young OA patients! At 17-year follow-up, they found: No increased poly wear or related osteolysis in COP group nor significant ceramic-related fracture or squeaking (3%) in COC group. Hence, one can settle for COP for most of the young patients to reduce the cost of surgery. COC can be reserved for very young patients, may be below 40 years.

Lee et al. (JBJS January 20, 2021), on the other hand, have reported neck and shoulder of femoral implant impinging on the edge of ceramic liner and causing notching of the metal and increased risk of ceramic liner fracture. This issue is not reported in COP components. This is another reason to favor COP over COC, especially in non-compliant patients in our scenario, who may sit cross legged or try to squat down against the medical advice!

2. Kinematic alignments (KAs) for knee arthroplasty are a new rage in the last few years. To compare how well it is compared to mechanical alignment (MA) technique, a study was performed where, in bilateral TKR cases, one knee was implanted using KA and the other with MA. At 2-year min follow-up,

there was NO difference between two groups in functional score and ROM. KA group required less no of releases (may be because slight varus was acceptable in KA – range 6 degree varus to 3 degree valgus). A small number of patients preferred KA knee, although large majority were unaware about any differences. None of them was aware about the slight visual difference in hip-knee-ankle axis between the two limbs. Conclusion – KA may be slightly better but has a risk of getting undercorrection of varus deformity. Use of navigation is necessary in KA, to accurately get 2–3 degree varus needed in tibia for natural joint line! – McEwen et al. (JOA February 01, 2020).

Another article on similar topic has mentioned that KA is better suited for young patients with high pre-operative activities. Not suitable for elderly people Niki Yasuo (JOA February 01, 2020).

3. Do we need to worry about medio-lateral size of femoral implant in TKR? – the “narrow” or the “female gender specific” implants increase the soft-tissue gaps; probably due to their smaller volume compared to standard size implant. Hence, if an implant company offers the option on additional “narrow” implants along with standard size components, we can do a better job of soft-tissue balancing in TKR (at present in Indian market, DePuy Attune system and Zimmer Gender and Persona system are the only two companies offering this). Ishita et al. (JOA February 01, 2020).

4. Today, we are trying to give “Painless” knee replacement as “Day-Care Surgery” to patients. Pain control following TKR can be improved with single dose intraoperative iv injection of dexamethasone of 1.5 mg/kg. The effect lasts for 12–21 h only and it has NO effect on 3 months functional score. We

must realize that to get the benefit of this, the surgeon must be aggressive to start physio within 2–3 h of the surgery and get the patient to do active movements within 6 h post-operative – Tammachote et al. (JOA February 01, 2020).

5. Chemoprophylaxis for preventing DVT after joint replacement surgery is a major issue faced by orthopedic surgeons. Giving oral/injectable anticoagulant is faced with risk of bleeding, wound hematoma, poor wound healing, and obviously higher cost. Low-dose aspirin (less than 165 mg/day) now is acceptable for DVT prophylaxis after joint replacement surgeries by NICE Guidelines of UK, European Guidelines and AAOS Guidelines in the USA. Low dose is as good as high dose (325 mg bid) in prevention. Hence, we can use 150 mg aspirin daily for prevention of DVT to keep patients safe and keep surgeons away from any medicolegal liability in case some patient develops DVT. Pervizi et al. (JOA March 01, 2020).

6. Tranexamic acid injections (perioperative) for reducing blood loss are an acceptable practice today. Many surgeons in India now use it. However, it has been shown to also reduce the risk of overall infection in arthroplasty. This is probably attributed to less blood loss, less blood transfusion, and subsequently less immunological issues: Pervizi et al. (JOA March 01, 2020). Hence, if you are not using it yet, start using tranexamic during surgery.

7. How much limb length can be increased safely in THR? – This question troubles hip surgeons when doing THR for hips which has significant shortening pre-operative. Now, there is intraoperative neurostimulation recording study reported in JBJS, which shows that limb lengthening can be done up to 5% length of the femur and 2.5% length of patient’s limb (from ASIS to Med Malleolus).

¹Consultant Ortho & Joint Replacement Surgeon.

²Fellow in Arthroplasty, Dr. Laud Clinic Dadar, Mumbai.

Address of Correspondence

Dr. Harish Bhende,
Consultant Ortho & Joint Replacement Surgeon
E-mail: harishbhende@gmail.com

The specific numbers to remember are 15 mm (\pm 6 mm) is SAFE amount of lengthening; 22 mm (\pm 6 mm) is critical lengthening. There is risk of nerve palsy beyond this! - Behram et al. (JBJS April 15, 2020).

8. One question is always asked by patient, when they get complication while undergoing first TKR – “Doctor, will I get the same complication again?” – And surgeon normally pacifies the patient that such things do not happen every time! Is there any truth in our pacification?

Surprisingly NO!!! Grace et al. (JBJS February 19, 2020) have shown that complications such as MI, ischemic stroke, DVT, pulmonary embolism, hematoma, urinary complications, and other cardiac complications have HIGHER chances after the second TKR surgery, if they have had it in

the first TKR. Patient must be warned about it! And we must be MORE careful about them!!!

9. Serum albumin is an important pre-operative check before major surgery. The absolute serum albumin value we need to know is 3.5 mg/dl. Kishawi et al. (JBJS May 20, 2020) have studied 135,000+ patients from US National Surgical Quality Improvement Programme database. They found that if Sr. albumin is less than 3.5 mg/dl, there is significant increased risk ($P < 0.005$) of superficial and deep infection, post-operative renal insufficiency, cardiac arrest, myocardial Infarction, pneumonia, high 30-day readmission rate for some complication, UTI, and septic shock! So guys, better get that albumin up before you pick up the knife for TKR/THR surgeries!!!

10. For the huge number of posterior

approach (PA) hip surgeons trained in India, who are always told by the “UK trained” arthroplasty surgeons to “go anterior” for TC #NOF patients, when doing hip replacement surgery, here is a solace from UK national Registry data! Matharu et al. (JBJS January 02, 2020)

have compared posterior and anterolateral approaches on UK National Registry database (from 2003 to 2015) by pair matching patients (to eliminate surgical cofounding factors). From outcome analysis of 7200+ pairs, they found that post-operative complications are LESSER with PA, patient survival was BETTER with PA (at 30 days, 1 year, and 5 years), and risk for revision was SAME in both approaches!!! So guys, you can use PA for all your hips, but do it well and remember to repair posterior capsule securely.

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